

## Safety Data Sheet

according to UK REACH Regulation

### TIP TOP HARDENER E-40

Revision date: 20.12.2023

Product code: 00156-0026

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

TIP TOP HARDENER E-40

#### Art.-No.

517 8009, 525 1067, 525 1068, 525 1069, 525 1122, 525 1123, 525 1139, 525 1146

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### Use of the substance/mixture

Hardener

### 1.3. Details of the supplier of the safety data sheet

#### Manufacturer

Company name: REMA TIP TOP AG  
Street: Gruber Strasse 65  
Place: D-85586 Poing  
Telephone: +49 (0) 8121 / 707 - 100  
Responsible Department: Responsible for the safety data sheet: sds@gbk-ingelheim.de

#### Supplier

Company name: REMA TIP TOP INDUSTRY UK LTD  
Street: Plumtree Industrial Estate, Harworth  
Place: Doncaster, DN11 8EW, South Yorkshire  
Telephone: +44 (0)1302 711233  
Internet: www.rema-tiptop.co.uk

### 1.4. Emergency telephone number:

INTERNATIONAL: +49 - (0) 6132 - 84463, GBK GmbH (24h - 7d/w - 365d/a)  
In England and Wales: NHS 111 In Scotland: NHS 24 - dial 111

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### GB CLP Regulation

Flam. Liq. 2; H225  
STOT SE 3; H336

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### GB CLP Regulation

#### Hazard components for labelling

Ethyl acetate

Signal word: Danger

#### Pictograms:



#### Hazard statements

H225 Highly flammable liquid and vapour.  
H336 May cause drowsiness or dizziness.

#### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.

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P240	Ground and bond container and receiving equipment.
P243	Take action to prevent static discharges.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

#### Special labelling of certain mixtures

EUH066	Repeated exposure may cause skin dryness or cracking.
EUH204	Contains isocyanates. May produce an allergic reaction.

#### 2.3. Other hazards

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

Vapours may form explosive mixture with air.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Chemical characterization

Preparation with thiophosphate in ethyl acetate

##### Hazardous components

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	GHS Classification	
141-78-6	Ethyl acetate	< 75 %
	205-500-4	
	607-022-00-5	
	01-2119475103-46	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066	
4151-51-3	Thionophosphoric acid-tris-(p-isocyanatophenyl)	< 30 %
	223-981-9	
	01-2119948848-16	
	Acute Tox. 4; H302	

Full text of H and EUH statements: see section 16.

##### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
4151-51-3	223-981-9	Thionophosphoric acid-tris-(p-isocyanatophenyl)	< 30 %
		oral: ATE = 500 mg/kg	

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General information

Remove contaminated soaked clothing immediately.  
 In the event of persistent symptoms receive medical treatment.  
 Take away from danger area and lay down affected person.

##### After inhalation

Move to fresh air in case of accidental inhalation of vapours.  
 In the event of symptoms refer for medical treatment.

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#### After contact with skin

Wash off with soap and plenty of water.  
Consult a doctor if skin irritation persists.

#### After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Seek medical treatment by eye specialist.

#### After ingestion

Do not induce vomiting.  
Rinse mouth.  
Summon a doctor immediately.  
Induce vomiting only upon the advice of a physician.

#### **4.2. Most important symptoms and effects, both acute and delayed**

May cause drowsiness or dizziness.  
Repeated exposure may cause skin dryness or cracking.

#### **4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptoms.

### SECTION 5: Firefighting measures

#### **5.1. Extinguishing media**

##### **Suitable extinguishing media**

Foam, carbon dioxide (CO<sub>2</sub>), dry chemical, water-spray.

##### **Unsuitable extinguishing media**

Full water jet

#### **5.2. Special hazards arising from the substance or mixture**

Fire may produce:  
Chlorinated hydrocarbons, Hydrogen cyanide (HCN), Isocyanates (NCO), Carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), phosphorus oxides (PO<sub>x</sub>) and nitrogen oxides (NO<sub>x</sub>).

#### **5.3. Advice for firefighters**

Use breathing apparatus with independent air supply.  
Protective suit.

#### **Additional information**

The vapour/air mixture is explosive, even in empty, uncleaned receptacles.  
Cool containers at risk with water spray jet.  
Collect contaminated firefighting water separately, must not be discharged into the drains.  
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

### SECTION 6: Accidental release measures

#### **6.1. Personal precautions, protective equipment and emergency procedures**

##### **General advice**

Ensure adequate ventilation.  
Remove persons to safety.  
Keep away sources of ignition.

##### **For non-emergency personnel**

Do not breathe vapours.  
Avoid contact with skin, eyes and clothing.

##### **For emergency responders**

In case of vapour formation use respirator.  
Use personal protective clothing.

#### **6.2. Environmental precautions**

Do not discharge into the drains/surface waters/ground water.

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#### 6.3. Methods and material for containment and cleaning up

##### For containment

Prevent spread over a wide area (e.g. by containment or oil barriers).

##### For cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).

Shovel into suitable container for disposal.

Container should not be gas-tight closed.

Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

#### 6.4. Reference to other sections

Observe protective instructions (see Sections 7 and 8).

Information for disposal see section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

Keep containers dry and tightly closed to avoid moisture absorption and contamination.

In case of insufficient ventilation, especially in confined areas.

Keep a good ventilation and air-exhaust at the place of work.

Avoid contact with skin, eyes and clothing.

##### Advice on protection against fire and explosion

Keep away from heat and sources of ignition.

Do not smoke.

Take precautionary measures against static discharges.

Use only explosion-proof equipment.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Keep container tightly closed in a dry, cool and well-ventilated place.

Pay attention to anti-explosion rules.

##### Hints on joint storage

Incompatible with:

Amines, Alcohols, Acids and bases.

##### Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.

#### 7.3. Specific end use(s)

Hardener

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
141-78-6	Ethyl acetate	200	734		TWA (8 h)	WEL
		400	1468		STEL (15 min)	WEL

#### 8.2. Exposure controls

##### Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

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#### Protective and hygiene measures

- Do not inhale vapours.
- Wash hands before breaks and immediately after handling the product.
- When using do not eat, drink or smoke.
- Treat subsequently with skin cream.
- Avoid contact with skin, eyes and clothing.
- Remove and wash contaminated clothes before re-use.

#### Eye/face protection

- Safety goggles with side protection (splash protection) or tightly fitting goggles (EN 166)
- Eye wash bottle with pure water (EN 15154).

#### Hand protection

- Splash protection:
- Protective gloves resistant to chemicals made off nitrile, Minimum coat thickness 0.4 mm, Permeation resistance (wear duration) > 10 minutes.
- Protective gloves resistant to chemicals made off butyl, minimum coat thickness 0.7 mm, permeation resistance (wear duration) > 60 minutes, i.e. protective glove <Butoject 898> made by www.kcl.de.
- This recommendation refers exclusively to the chemical compatibility and the lab test conforming to EN 374 carried out under lab conditions.
- Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

#### Skin protection

- Long sleeved clothing (DIN EN ISO 6530)

#### Respiratory protection

- In case of insufficient ventilation wear suitable respiratory equipment (gas filter type A) (EN 14387).

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Yellowish
Odour:	Ester-like

	Test method
pH-Value:	n.d.

#### Changes in the physical state

Melting point/freezing point:	n.d.
Boiling point or initial boiling point and boiling range:	approx. 77 °C
Sublimation point:	n.a.
Softening point:	n.d.
Flash point:	approx. - 4 °C DIN 51755
Sustaining combustion:	Sustaining combustion

#### Flammability

Solid/liquid:	n.a.
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#### Explosive properties

The product is considered non-explosive; nevertheless explosive vapour/air mixture can be generated.

Lower explosion limits:	2,2 vol. %
Upper explosion limits:	11,5 vol. %
Auto-ignition temperature:	approx. 460 °C

#### Self-ignition temperature

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Solid: n.a.

Gas: n.a.

Decomposition temperature: n.d.

**Oxidizing properties**

Not oxidising.

Vapour pressure: approx. 97 hPa  
(at 20 °C)Density (at 20 °C): approx. 1 g/cm<sup>3</sup> DIN 53217

Bulk density: n.a.

Water solubility: Reacts with water.  
(at 20 °C)**Solubility in other solvents**

Acetone, dichloromethane: Miscible

Partition coefficient n-octanol/water: n.d.

Viscosity / dynamic: approx. 3 mPa·s DIN 53019  
(at 20 °C)

Viscosity / kinematic: n.d.

Flow time: n.d.

Relative vapour density: n.d.

Evaporation rate: n.d.

Solvent separation test: n.d.

Solvent content: &lt; 75 %

**9.2. Other information**

No data available

**SECTION 10: Stability and reactivity****10.1. Reactivity**

No decomposition if stored and applied as directed.

**10.2. Chemical stability**

Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

Reactions with strong acids and alkalies.

Reactions with alcohols.

Reactions with amines.

**10.4. Conditions to avoid**

To avoid thermal decomposition, do not overheat.

Vapour/air mixtures are explosive at intensive warming.

Heating can release vapours which can be ignited.

**10.5. Incompatible materials**

alcohols, Amines, Acids and bases.

**10.6. Hazardous decomposition products**

No hazardous decomposition products known.

Fire may produce:

Isocyanates, chlorinated hydrocarbons, Hydrogen cyanide gas, Carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), phosphorus oxides (PO<sub>x</sub>) and nitrogen oxides (NO<sub>x</sub>).

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## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in GB CLP Regulation

#### Acute toxicity

Based on available data, the classification criteria are not met.  
LD50/oral/rat: > 2000 mg/kg [OECD 423]  
LD50/dermal: No data available.  
LC50/inhalation: No data available.

#### ATEmix calculated

ATE (oral) 1852 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

#### Irritation and corrosivity

Based on available data, the classification criteria are not met.  
Repeated exposure may cause skin dryness or cracking.  
Skin irritation (rabbit): Mildly irritating. [OECD 404]; Not classified.  
Eyes irritation (rabbit): Mildly irritating. [OECD 405]; Not classified.

#### Sensitising effects

Based on available data, the classification criteria are not met.  
Contains isocyanates. May produce an allergic reaction.  
Sensitization skin (guinea pig): Negative [OECD 406]

#### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.  
Mutagenicity: Not classified. [Ames-Test: Negative, OECD 471]; [Micronucleus test: Negative, OECD 487]

#### STOT-single exposure

May cause drowsiness or dizziness. (Ethyl acetate)

#### STOT-repeated exposure

Based on available data, the classification criteria are not met.

#### Aspiration hazard

Based on available data, the classification criteria are not met.

#### Additional information on tests

Classification in compliance with the assessment procedure specified in the Regulation (EC) no 1272/2008.

### 11.2. Information on other hazards

#### Endocrine disrupting properties

No data available

#### Other information

Evaporation of solvents may cause irritation to eyes and mucous membranes.

## SECTION 12: Ecological information

### 12.1. Toxicity

LC50/Brachydanio rerio/96 h = No toxic effects in saturated solution. [OECD 203]  
EC50/Daphnia magna/48 h = No toxic effects in saturated solution. [OECD 202]  
IC50/Scenedesmus subspicatus/72 h = No toxic effects in saturated solution. [OECD 201]  
EC50/Activated sludge > 10000 mg/l [OECD 209]

### 12.2. Persistence and degradability

Not readily biodegradable.

### 12.3. Bioaccumulative potential

No data available

### 12.4. Mobility in soil

No data available

### 12.5. Results of PBT and vPvB assessment

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The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

#### **12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

#### **12.7. Other adverse effects**

Low hazard to waters.

#### **Further information**

Do not flush into surface water or sanitary sewer system.

The transformation with water into CO<sub>2</sub> and polyureas is strongly stimulated by so-called liquid crushers (ammonia, soda or alcohols, combined with liquid soap).

In aqueous systems, formation of insoluble and chemically inert (inactive) polyureas.

### SECTION 13: Disposal considerations

#### **13.1. Waste treatment methods**

##### **Disposal recommendations**

Where possible recycling is preferred to disposal.

Can be incinerated, when in compliance with local regulations.

##### **List of Wastes Code - residues/unused products**

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other hazardous substances; hazardous waste

##### **Contaminated packaging**

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Packaging that cannot be cleaned should be disposed of like the product.

### SECTION 14: Transport information

#### **Land transport (ADR/RID)**

<b><u>14.1. UN number:</u></b>	UN 1133
<b><u>14.2. UN proper shipping name:</u></b>	Adhesives
<b><u>14.3. Transport hazard class(es):</u></b>	3
<b><u>14.4. Packing group:</u></b>	II
Hazard label:	3



Classification code:	F1
Limited quantity:	5 L / 30 kg
Excepted quantity:	E2
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

#### **Inland waterways transport (ADN)**

<b><u>14.1. UN number:</u></b>	UN 1133
<b><u>14.2. UN proper shipping name:</u></b>	Adhesives
<b><u>14.3. Transport hazard class(es):</u></b>	3



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**14.4. Packing group:**

II

Hazard label:

3



Classification code:

F1

Limited quantity:

5 L / 30 kg

Excepted quantity:

E2

**Marine transport (IMDG)****14.1. UN number:**

UN 1133

**14.2. UN proper shipping name:**

Adhesives

**14.3. Transport hazard class(es):**

3

**14.4. Packing group:**

II

Hazard label:

3



Marine pollutant:

No

Limited quantity:

5 L / 30 kg

Excepted quantity:

E2

EmS:

F-E, S-D

**Air transport (ICAO-TI/IATA-DGR)****14.1. UN number:**

UN 1133

**14.2. UN proper shipping name:**

Adhesives

**14.3. Transport hazard class(es):**

3

**14.4. Packing group:**

II

Hazard label:

3



Limited quantity Passenger:

1 L

Passenger LQ:

Y341

Excepted quantity:

E2

IATA-packing instructions - Passenger:

353

IATA-max. quantity - Passenger:

5 L

IATA-packing instructions - Cargo:

364

IATA-max. quantity - Cargo:

60 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS:

No

**14.6. Special precautions for user**

Handle in accordance with good industrial hygiene and safety practice.

**14.7. Maritime transport in bulk according to IMO instruments**

The transport takes place only in approved and appropriate packaging.

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

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Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

 Directive 2004/42/EC on VOC in  
paints and varnishes: < 75 %

 Information according to Directive  
2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

#### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

#### 15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

### SECTION 16: Other information

#### Abbreviations and acronyms

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses  
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure  
 IMDG = International Maritime Code for Dangerous Goods  
 IATA/ICAO = International Air Transport Association / International Civil Aviation Organization  
 MARPOL = International Convention for the Prevention of Pollution from Ships  
 IBC-Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk

GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 REACH = Registration, Evaluation, Authorization and Restriction of Chemicals  
 CAS = Chemical Abstract Service  
 EN = European norm  
 ISO = International Organization for Standardization  
 DIN = Deutsche Industrie Norm  
 PBT = Persistent Bioaccumulative and Toxic  
 vPvB = Very Persistent and very Bio-accumulative  
 LD = Lethal dose  
 LC = Lethal concentration  
 EC = Effect concentration  
 IC = Median immobilisation concentration or median inhibitory concentration

#### Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Flam. Liq. 2; H225	On basis of test data
STOT SE 3; H336	Calculation method

#### Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H319 Causes serious eye irritation.  
 H336 May cause drowsiness or dizziness.  
 EUH066 Repeated exposure may cause skin dryness or cracking.  
 EUH204 Contains isocyanates. May produce an allergic reaction.



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#### Further Information

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge.

The delivery specifications are contained in the corresponding product sheet.

This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

(n.a. = not applicable; n.d. = not determined)

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*(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*